



# Environmental Sustainability Committee

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*Working for You!*



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# Agenda

- Who am I and what is Stormwater Planning?
- What is the current condition of our streams?
- What is Fairfax County doing to help our streams?
- Project examples
- Where are we going from here?
- What can you do?

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## Stormwater Business Area

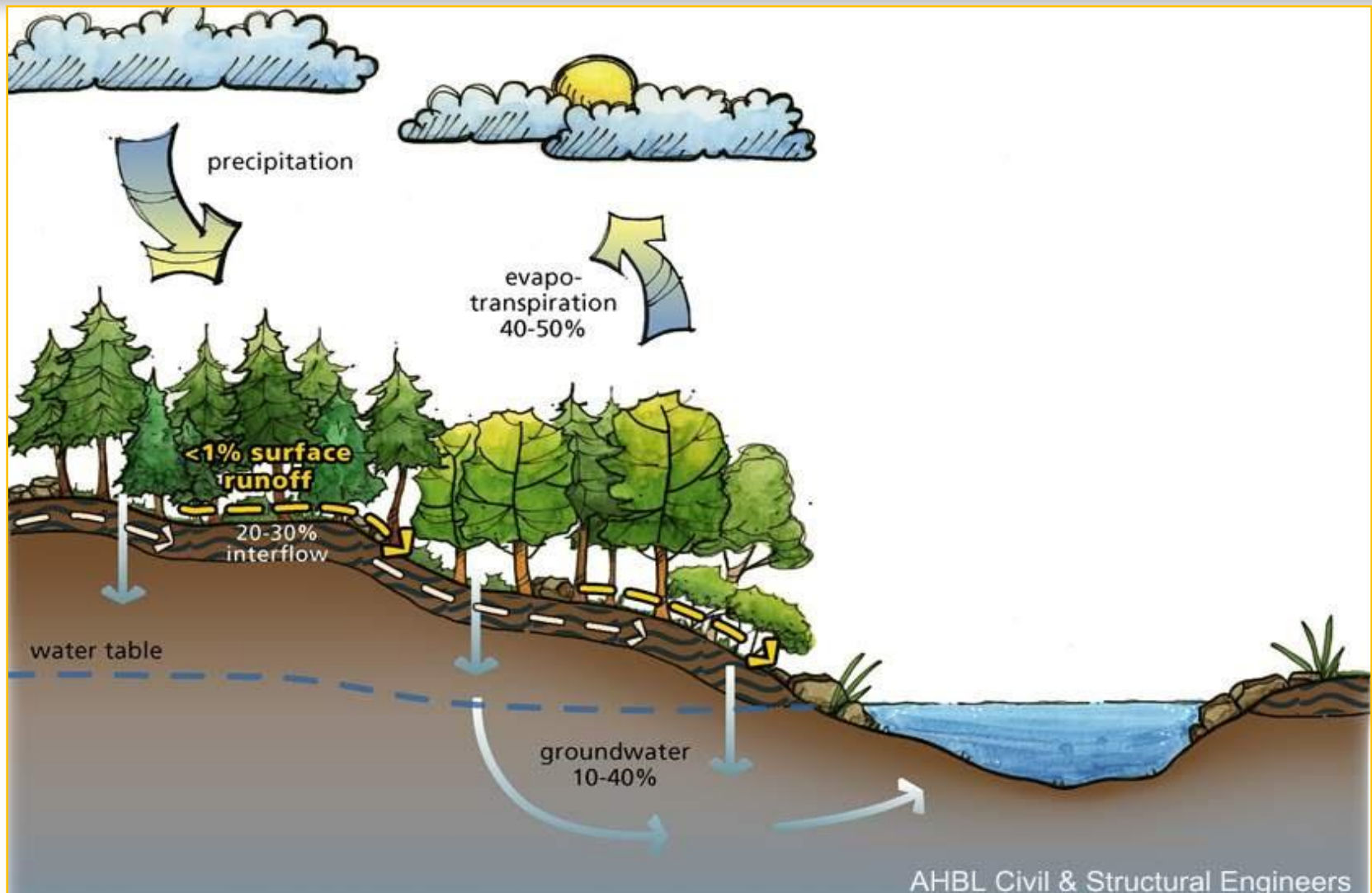
Need to protect our vital natural resources, to promote healthy watersheds, and to provide for healthy, safe and thriving communities.





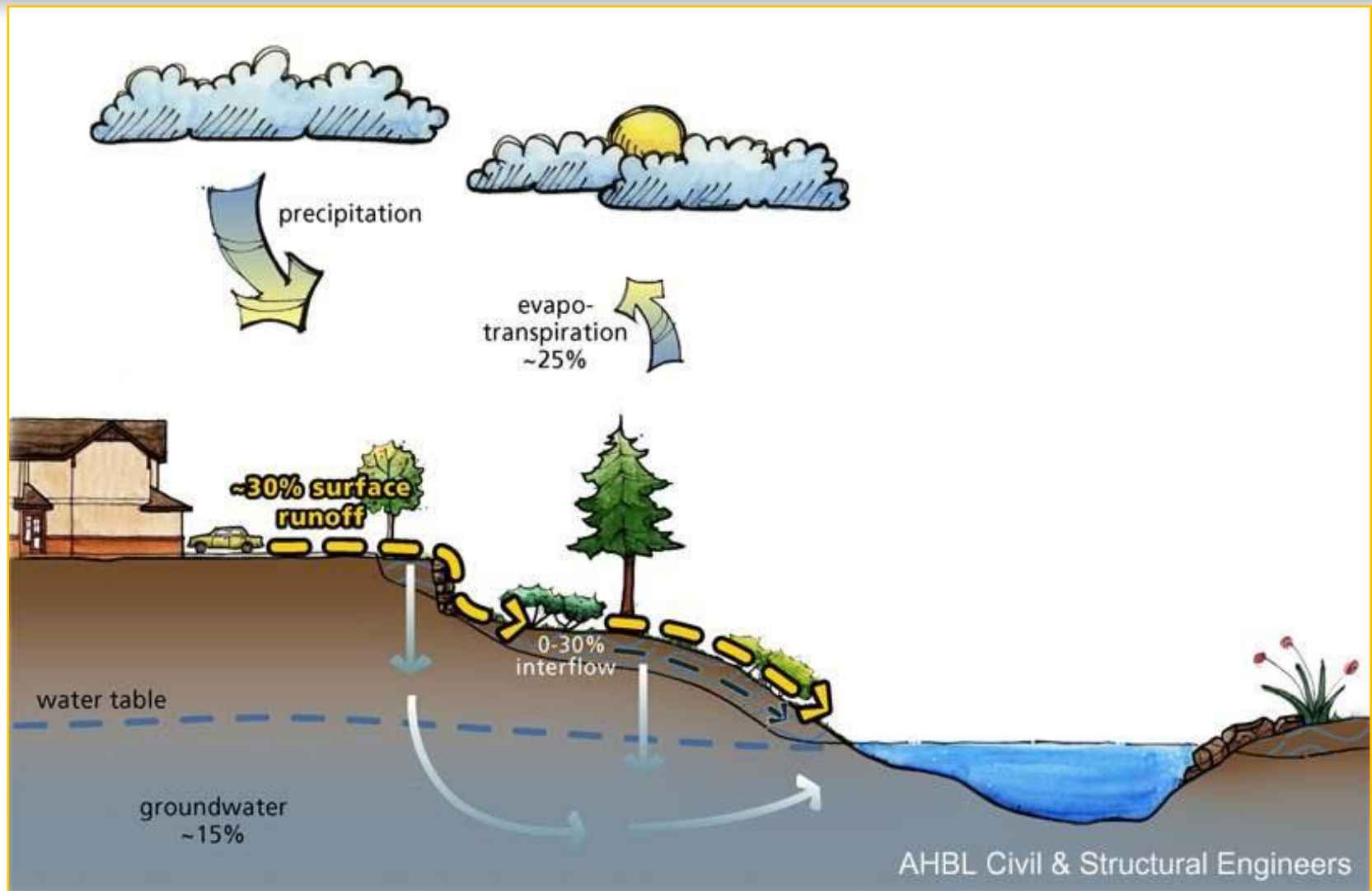
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## Pre-Development



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## Post-Development



# Accotink Creek

## Description

The headwaters of Accotink Creek are located in the center of Fairfax County and the stream drains southeast to Accotink Bay, then Gunston Cove and finally to the Tidal Potomac River.

## Watershed Size

51 square miles (38 in FC)

~27% of land is impervious

## Major Stream and Tributaries

16 WMAs: Bear Branch, Crook Branch, Daniels Run, Hunters Branch and Long Branch

## Unique Features

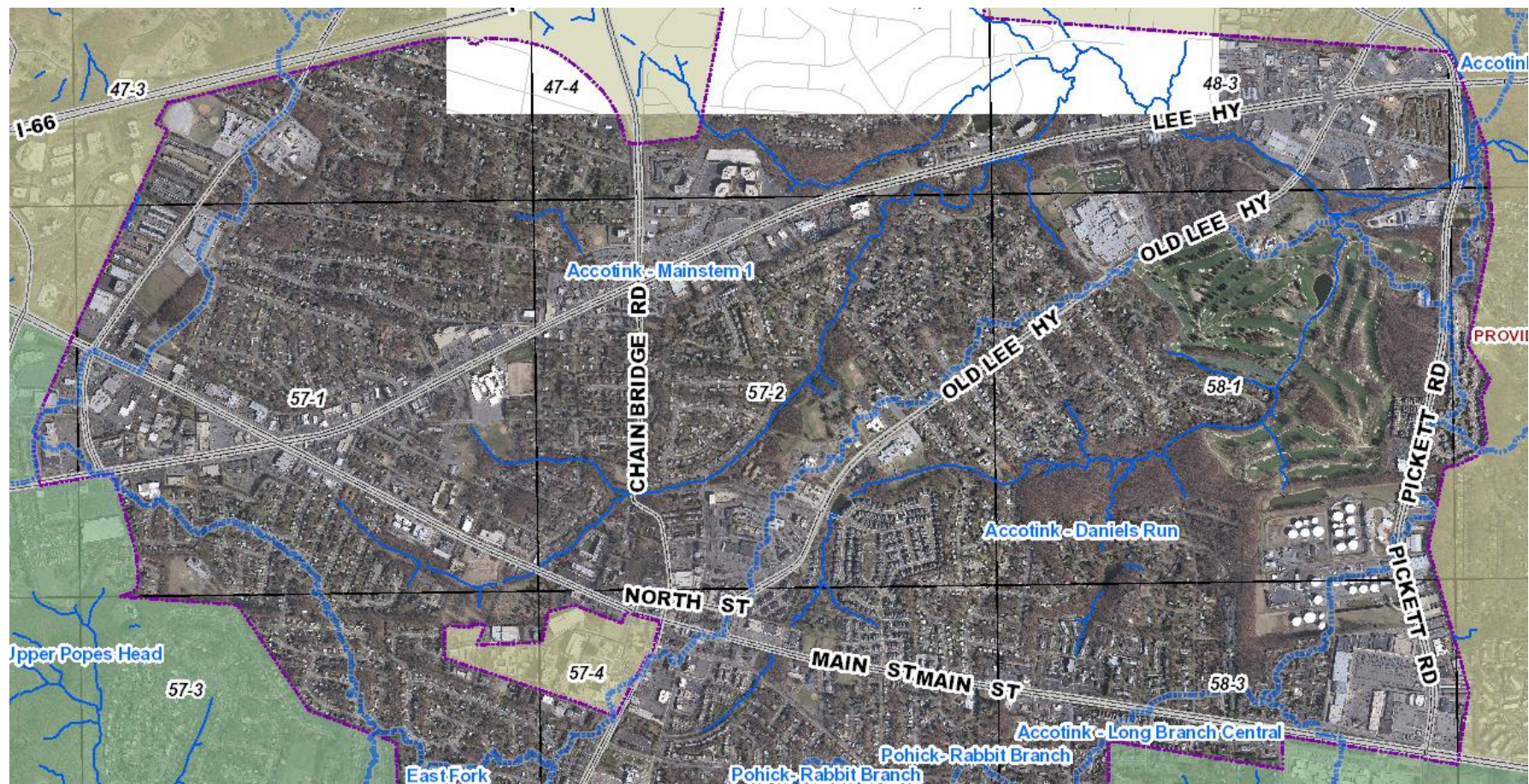
Lake Accotink, with a surface area of approximately 70 acres, is located in the central portion of the watershed.





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## City of Fairfax



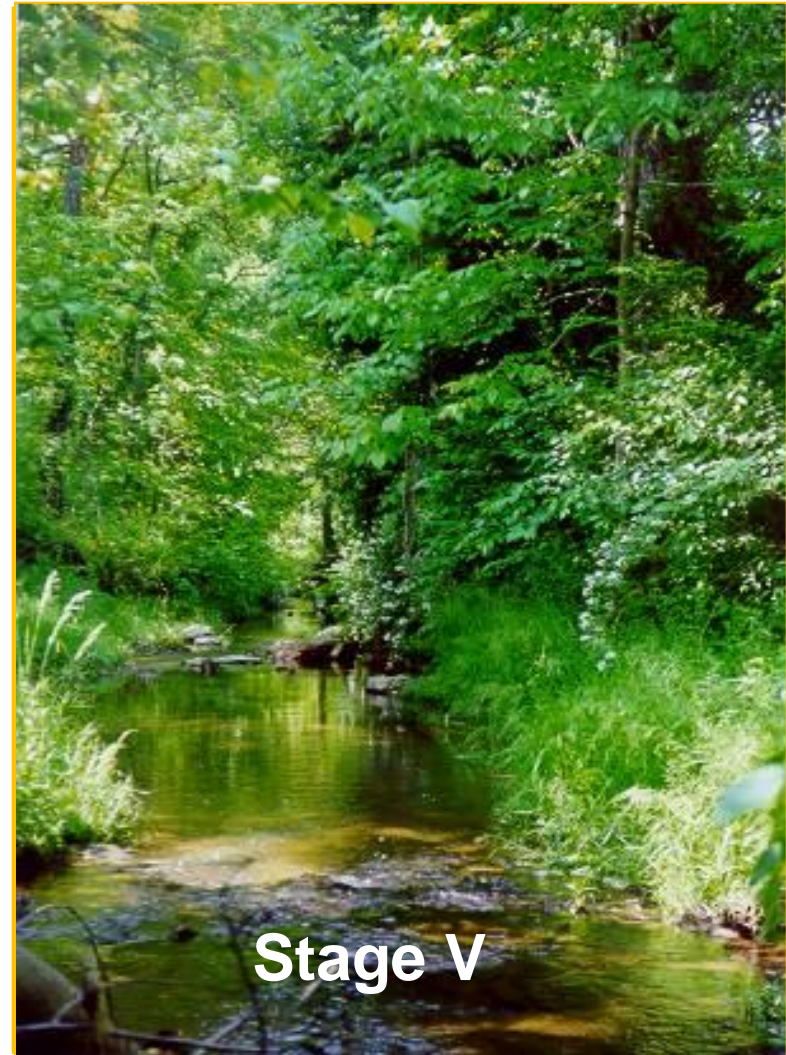
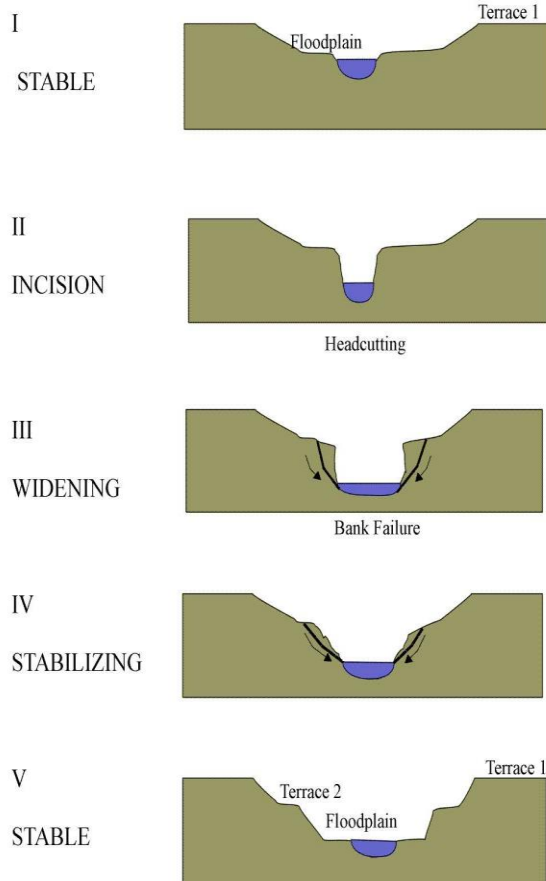


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## Stream Reaction

### INCISED CHANNEL EVOLUTION MODEL

(Schumm, Harvey, Watson 1984)





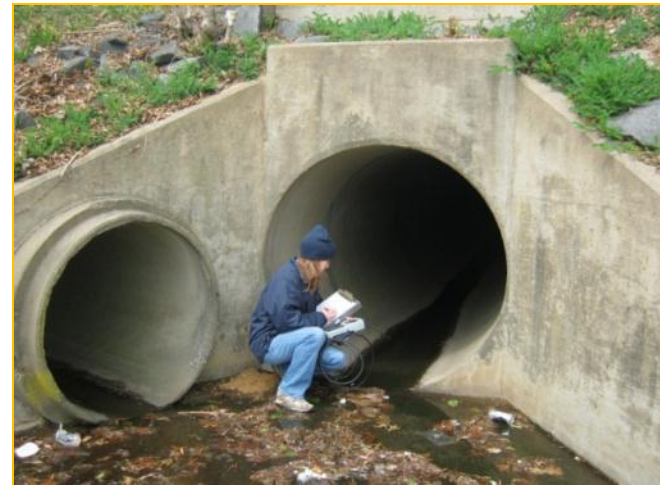
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## Pollutants in Stormwater Runoff



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## Watershed Health Indicators





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## Overall Watershed Conditions

Watershed	Number of Benthic Sites	Average IBI	Rating	Number of Fish Sites	Average IBI	Rating
Accotink Creek	30	23.9	Poor	19	31.6	Poor
Belle Haven	4	24.4	Poor	1	7.1	Very Poor
Bull Run	3	50.8	Fair			
Cameron Run	27	28.1	Poor	15	12.9	Very Poor
Cub Run	25	28.7	Poor	18	42.9	Fair
Dead Run	5	28.5	Poor	2	10.7	Very Poor
Difficult Run	89	40.4	Fair	43	51.2	Fair
Dogue Creek	8	30.8	Poor	5	42.9	Fair
Horsepen Creek	6	28.8	Poor	2	21.4	Poor
Johnny Moore Creek	5	46.4	Fair	2	39.3	Poor
Kane Creek	5	67.8	Good	1	42.9	Fair
Little Hunting Creek	8	33.3	Poor	6	22.6	Poor
Little Rocky Run	10	23.1	Poor	4	59.5	Fair
Mill Branch	8	48.6	Fair	3	21.4	Poor
Nichol Run	9	59.3	Fair	1	57.1	Fair
Occoquan	6	83.6	Excellent	1	21.4	Poor
Old Mill Branch	1	74.9	Good			
Pimmit Run	10	16.1	Very Poor	4	5.4	Very Poor
Pohick Creek	61	30.9	Poor	24	55.9	Fair
Pond Branch	7	60.9	Good	2	50	Fair
Popes Head Creek	26	58.1	Fair	11	64.3	Good
Ryans Dam	3	77.2	Good			
Sandy Run	11	68.2	Good	2	67.9	Good
Scotts Run	3	18.4	Very Poor	2	0	Very Poor
Sugarland Run	9	42.5	Fair	5	51.4	Fair
Turkey Run	2	35.7	Poor			
Wolf Run	11	81.4	Excellent	4	37.5	Poor
Fairfax County	392	39.6	Poor	176	42.1	Fair

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# I'm Not Dead Yet!







## Pollutant Reductions:

- Nitrogen
- Phosphorous
- Sediment

“The Bay and its rivers are *overweight* with nitrogen, phosphorus and sediment...”



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## ... But This is Confusing

- The concept of Stormwater is still new and evolving
  - Wastewater ~1900s, Recycling ~1990s
  - Rip-Rap/Concrete to Natural Channel Design





# Why Should I care?

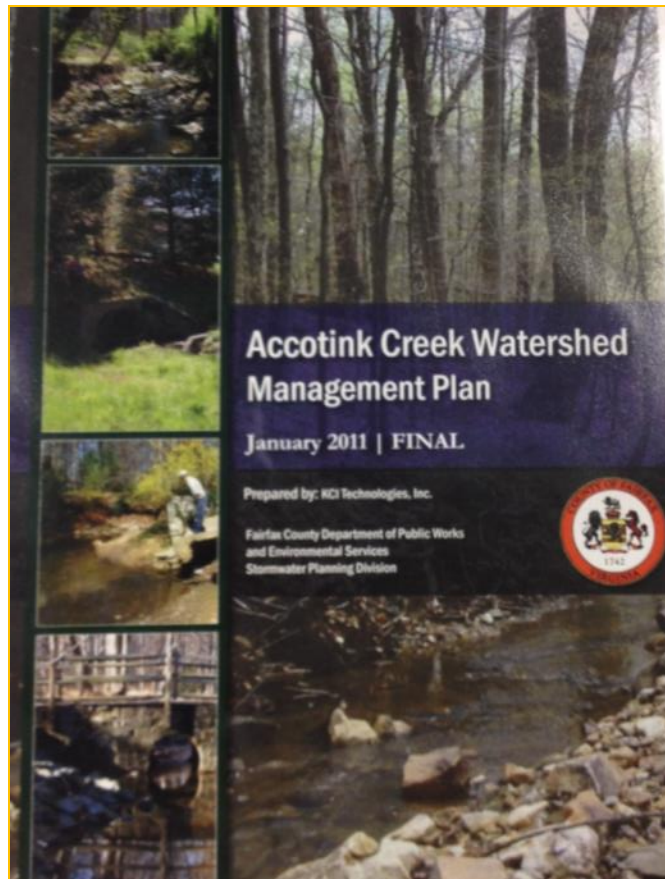
- Drinking water
- Stormwater Service District
- Biodiversity
- Heat Island Effect
- Green Space
- Recreation/Use of Water
- Property Value
- Save the Crabs – Then Eat Them
- Connection to our Environment

We are the problem =  
We should be the solution



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## Watershed Management Plans



A Watershed Management Plan is a way for the county to assess the health and well being of our environment at a subwatershed scale.

The plans contain a *ranked* 25-year list of proposed projects.

[www.fairfaxcounty.gov/watersheds](http://www.fairfaxcounty.gov/watersheds)

Stormwater Planning Division





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## How FC is Helping Our Watersheds

### Structural

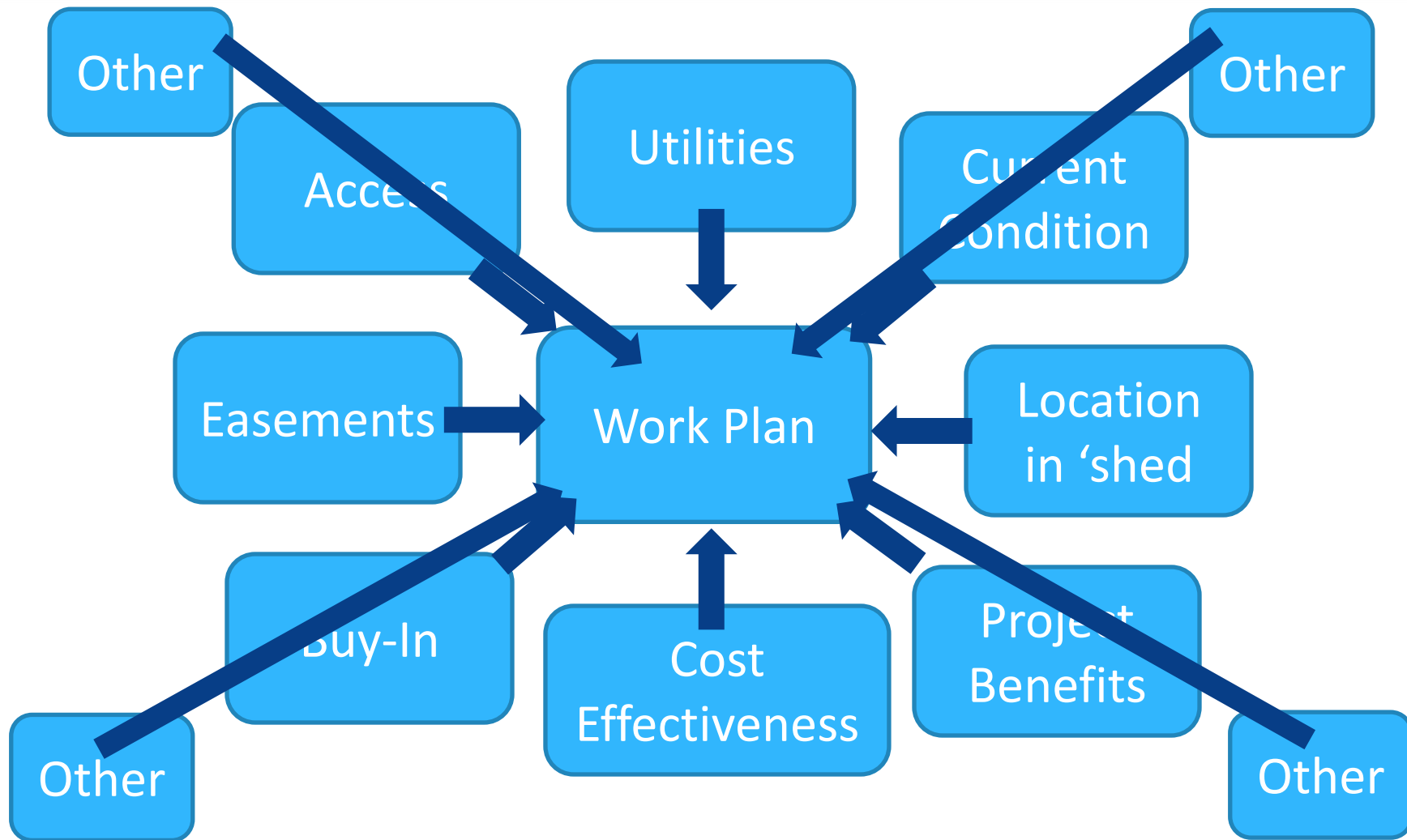


### Non-Structural



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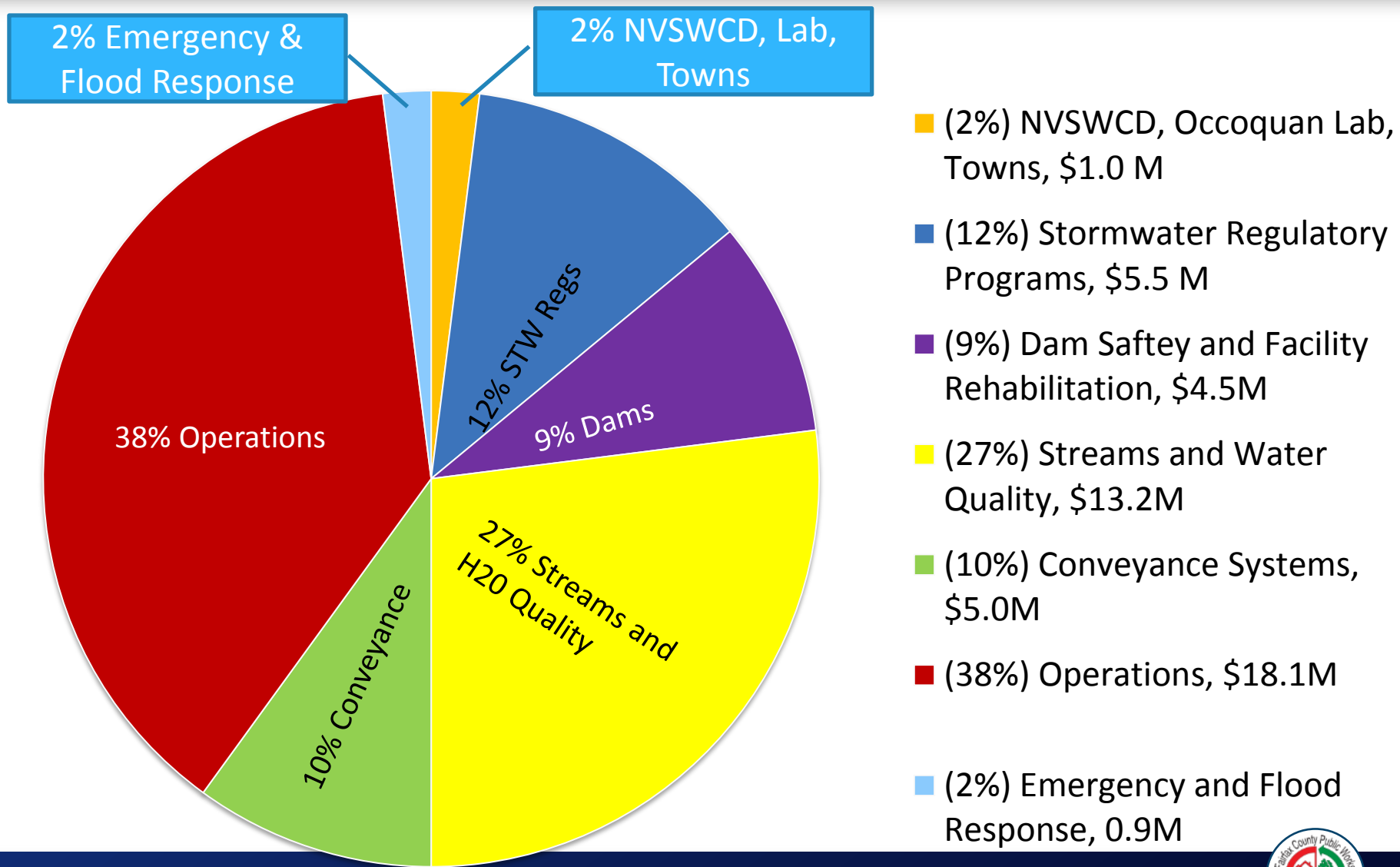
## Future Project Prioritization





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## Stormwater FY15 Budget



# Stream Restoration – Bridal Path Before & After



**Drainage Area  
(acres)**

162

**Phosphorous Removal  
(lbs/yr)**

138

**Nitrogen Removal  
(lbs/yr)**

790

**Sediment Removal  
(tons/yr)**

132



# Pond Retrofits – Fair Woods Before & After



Area Treated (acres)	Phosphorous Removal (lbs/yr)	Nitrogen Removal (lbs/yr)	Sediment Removal (tons/yr)
26	9	44	0.9

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# Pond Retrofits – Fair Woods Now





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## Low Impact Development – Noman Cole Before & After



Area Treated (acres)	Phosphorous Removal (lbs/yr)	Nitrogen Removal (lbs/yr)	Sediment Removal (tons/yr)
0.6	0.4	2	

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## Non-Structural – Meadow Planting at Americana Before & After





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## Still Need for Education





# City of Fairfax Environmental Sustainability Committee Outreach Events



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# BONUS: Introduces Other Science Careers



# Next Steps – Non-Structural Practices at Schools





# What Can You Do? Stormwater is a Resource



**For additional information, please contact**

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*[www.fairfaxcounty.gov/dpwes](http://www.fairfaxcounty.gov/dpwes)*

